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RESERVE
Agricultural Reforms and Productivity
Trade in Chile
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ABSTRACT

Under President Salvador Allende, Chile's land reform efforts are being based on formation of large farm cooperatives rather than the small owner-operated farms emphasized by the previous administration. Expropriation of all large privately owned farms is due to be completed in 1972. Crop productivity may be down sharply in 1972 but the causes cannot be clearly identified with changes introduced by the current government. Cattle stock numbers have decreased precipitously since late 1970. The U.S. share of the growing Chilean market for foreign agricultural commodities has decreased, as has the value of U.S. agricultural exports to Chile.

Keywords: Chile, land tenure, reform, trade, institutions, agricultural productivity, agricultural production.

Cover photograph: A young girl in Chile's Vineyard *Casa Blanca* carries her tray of grapes up to the end of the row, where it will be dumped into a huge bucket, which in turn is carried to the wagons.

--Photograph courtesy of *Américas* magazine
Organization of American States

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SUMMARY AND CONCLUSIONS

The coalition Socialist administration of Chilean President Salvador Allende has resolved that all farmland it expropriates is to revert to cooperative ownership. Under the previous administration of Christian Democrat Eduardo Frei, expropriation was also a key part of reform of Chile's land tenure system, which in 1965 saw most of the land in the hands of a few landowners. But under Frei, the expropriated lands were to be parcelled out gradually to the workers, who would become agricultural entrepreneurs, individually owning their own small plot.

The Frei government expropriated 3.5 million hectares of farmland. At the time Allende took office on November 4, 1970, most of this land was still in Settlements, the organizational units designed to provide a transitional stage during which management training would be provided to workers before the gradual parcelling out of the land to them.

These Settlements were allowed to continue in operation, but their land will now revert to cooperative ownership. No new Settlements will be formed. Instead, expropriated farms are being grouped into Agrarian Reform Centers in which, after a 3- to 5-year transition period, the land is to become community property of the Centers, to be worked on a cooperative basis.

Even under the Christian Democrats, there was a tendency toward this cooperative concept that Allende has made explicit. A small percentage of the land expropriated under Frei was assigned as community property to newly formed cooperatives. However, this beginning move away from the concept of parcelling out small plots was, in the main, simply based on the realization that larger farms would enjoy economies of scale.

From November 4, 1970, to March 14, 1972, the Allende government expropriated 1,918 farms comprising over 3 million hectares. The first Agrarian Reform Center was formed in September 1971. The Centers' social structure is intended to end discrimination and class stratification among workers, features which Allende has criticized as characterizing the Settlements. One feature attacked was the priority given in assignment of Settlement land to heads of families who had been living and working on the land prior to expropriation. Day laborers and migrant workers were precluded from receiving land because of this. Other features criticized include the division of Settlement income among the workers without regard to worker productivity and the criteria that only males could participate in Settlement government and only male heads of families were eligible to receive land.

Under the new Center concept, no land is to revert to individual ownership except for the worker's house and garden. Workers in the Centers are paid according to work quotas. All workers over age 16 who had been working on the land at the time of expropriation have equal rights to participate in Center governing bodies.

In addition to instituting reform of the land tenure system and changes in the social structure of the transitional organizational units, the Allende government has increased the flow of credit to the agricultural sector by establishing new lines of credit at interest rates lower than under previous lines. To establish a greater measure of control over the agricultural sector and to fight inflation and increase farm incomes at the same time, the Allende government has taken control of the supply of agricultural inputs and much of the purchasing and distribution of farm output.

One purpose of the changes in the agricultural sector is to increase agricultural productivity and total output. Crop productivity increased from 1965 through 1971 at an average of 2.5 percent a year. For the 1972 crop--the first one for which all production decisions were made during the Allende administration--productivity may be down sharply, based on preliminary data on area planted and forecasts of output. However, the causes of the decline cannot be clearly identified with changes introduced by the Allende government. Some crops have not recovered to productivity levels attained before the severe drought of 1969.

Chile's cattle numbers decreased precipitously shortly after President Allende's election victory in September 1970. Allende has stated that 200,000 head were smuggled out of Chile. The average weight of cattle slaughtered in Chile has continued a slow decline that started in 1965.

Total agricultural output has increased since 1965, but not at a rate sufficient to keep pace with Chile's population growth and to meet the increased demand for agricultural commodities created by Allende's income redistribution policy. As a result, the value of imports of agricultural commodities--particularly wheat, corn, beef, dry milk, and vegetable oils--has doubled since 1966 and is likely to remain high over the next few years.

Although U.S. agricultural exports to Chile under Government programs dropped sharply in 1971 compared with the 1966-70 average, U.S. commercial sales showed little change. Nontraditional suppliers, however, have picked up the increasingly large margin of Chilean agricultural imports by extending credit. The political sympathies of the Allende government, coupled with its policy of trade diversification, make it unlikely that the United States will increase or even maintain its historical share of this expanding market for agricultural commodities.

AGRICULTURAL REFORMS AND PRODUCTIVITY AND TRADE IN CHILE SINCE 1965

By Bruce L. Greenshields
Foreign Demand and Competition Division, ERS

INTRODUCTION

This study describes recent changes in Chile's land tenure system and in government policies affecting agricultural credit, prices, and inflation in Chile. One purpose of these changes is to increase agricultural productivity and total output and to thereby improve the balance of agricultural trade. Therefore, this study also seeks to measure Chile's recent agricultural output, productivity, and trade to assess the effectiveness of the changes in the short run.

Is it too soon to make such an assessment? This question can best be answered by contemplating the long term with regard to the impact of fundamental changes in any country's agricultural sector. The long term over which such impact would be fully known could be 25 to 50 years, as was the case in the Soviet Union. Thus, no short-term assessment would mean no assessment at all for many years. In view of the demand for current information about the changes taking place in Chile and their implications for U.S. exporters of farm products, 1/ it is felt that short-term analysis is justified and necessary. Much of the data used are preliminary or estimated. Final data are available only for census years in Chile, and the last one was 1965.

INSTITUTIONAL STRUCTURE OF CHILE'S AGRICULTURE

Chilean agricultural production between 1936 and 1965 fell well short of demand and barely kept pace with population growth. 2/ Water, arable land resources, and the labor force, however, are adequate for potential agricultural self-sufficiency. 3/ Blame for the stagnation of production up to 1965 has rested mainly with the land tenure system and with government policies affecting inputs, prices, and inflation. 4/

1/ The value of U.S. agricultural exports to Chile in 1971 was \$22 million; to Latin America, \$779 million; and to the world, \$7.7 billion.

2/ Agricultural production increased at an average annual rate of only 1.8 percent between 1936 and 1965, while internal demand for agricultural products increased 2.5 percent (1). (Italicized numbers in parentheses refer to sources listed on p.18.)

3/ A study prepared by the Catholic University of Chile in 1969 states that "Chile's potential for significant expansion of agricultural production is not limited by the available land resources which have a high productive potential" (2). In a review of that study, Francis S. Urban states that the "supply and demand projections for Chile indicate that the country has the potential of becoming largely self-sufficient in agricultural production" (3). The Agricultural Planning Office of the Chilean Ministry of Agriculture concluded in 1968 that the growth rate of agricultural production can be tripled utilizing the land currently under cultivation (1).

4/ Pierre R. Crosson points out in his 1970 study of agricultural productivity in Chile that "the land tenure system in Chile, coupled with the operation of credit institutions, has made it virtually impossible for the great bulk of the farm population to acquire the knowledge and other inputs essential to a modern, technically evolving agriculture" (4). The Catholic University study concludes that "the major problems affecting agriculture may be found in the nature of its agricultural institutions and policies" (2). In a 1966 study William C. Thiesenhusen states that to "attempt to determine reasons for agriculture's present stagnation--or even retrogression--in the face of adequate resources, we must turn to the structure of Chile's agriculture" (5).

1965

Historically, a small number of persons (not necessarily farmers ^{5/}) owned most of Chile's farmland, and most of the farmers occupied very small plots. In 1965, 1.3 percent of the farms encompassed 73 percent of the farmland, while close to one-half of the farms were of less than 5 hectares. Sixty-one percent of the farmland under cultivation was on farms of over 100 hectares in size and less than 4 percent was on farms under 5 hectares (table 1).

Table 1.--Distribution of farmland units in Chile by size, 1965

Size in hectares	Farmland units		Farmland area			
	Number	Percent of total	Total	Under culti- vation	Percent of total	Percent under culti- vation
			1,000 hectares			
Under 5.	123,636	48.8	207	165	0.7	80
5-19	63,047	24.9	644	385	2.1	60
20-49.	29,361	11.6	912	396	3.0	43
50-99.	14,784	5.8	1,023	368	3.3	36
100-999.	19,333	7.6	5,573	1,763	18.2	32
1,000-4,999.	2,601	1.0	5,495	932	17.9	28
5,000 and over	730	0.3	16,795	502	54.8	3
Total.	253,492	100.0	30,649	4,511	100.0	15

Source: (6).

According to the National Agricultural Census of 1965, there were 253,492 farmland units in Chile in that year; these were made up of 364,725 ownership units or parts thereof. ^{6/} The reason for distinguishing between farmland units and ownership units is that the farmland unit corresponds to the usual concept of a farm but government expropriation of farmland, discussed later, is based on the ownership unit, which is referred to by the government as a farm.

In 1965, the producer--defined by the census as an individual or a legal entity such as a corporation, church, or municipality--owned all of the land in his farmland unit in 47 percent of the units, covering 73 percent of the farmland. The remaining 53 percent of the units were worked under different types of tenancy arrangements (table 2).

^{5/} Nonfarmers held farmland as a hedge against inflation and as a source of prestige.

^{6/} Farmland unit, which corresponds to the usual concept of a farm, refers to land under the control of 1 producer, regardless of the ownership, size, or location of the land. Ownership unit refers to land listed in the real estate registers by owner. The actual number of ownership units was less than 364,725 but cannot be determined from the census because parts of 1 ownership unit may have been in more than 1 farmland unit.

Table 2.--Tenancy of farmland units in Chile, 1965

Type of tenancy	Number of farmland units	Percent of total units	Area (1,000 hectares)	Percent of total area
Total	253,492	100	30,649	100
1. Producer owns land.	119,631	47	22,496	73
2. Producer rents land	12,292	5	3,522	11
3. Producer uses land and pays owner in kind or money equivalent (i.e., producer is sharecropper)	18,007	7	249	1
4. Producer uses land as payment due him for services rendered to owner	53,930	21	98	0.3
5. Producer uses land free of any charge by owner, with owner's consent.	15,532	6	633	2
6. Producer uses land free of any charge by owner, without owner's consent	6,138	2	524	2
7. Combination of 1 and 2.	4,249	2	2,059	7
8. Combination of 1 and 3.	6,186	3	199	1
9. Combination of 3 and 4.	6,385	3	42	0.1
10. Other combinations.	11,142	4	827	3

Source: (6).

1965-70

The land tenure situation in 1965 was not uncharacteristic of what it had been since the Spanish conquerors were granted land and domain over the Indians by the Crown. Fundamental change of the land tenure system began with the government of President Eduardo Frei (November 1964 to November 1970), but certain groundwork had been laid by the previous administration. For example, the Agrarian Reform Law of 1962 (Law 15,020) outlined provisions for the expropriation of farmland and created the Agrarian Reform Corporation (CORA). The concept of agrarian reform in 1962 was based on colonization and consolidation of subsistence farms (*minifundios*) and reallocation of parcels on a more rational basis. In 1965, President Frei introduced a new agrarian reform law (Law 16,640) which provides for the expropriation of the large farms and a gradual transfer of ownership to the workers, each worker receiving a parcel of the former large estate. While both laws provide for farm expropriation aimed at more efficient land utilization, Law 16,640 went much further by legalizing expropriation based on size alone (table 3).

Table 3.--Comparison of Chile's Agrarian Reform Laws 15,020 and 16,640

Subject	Law 15,020 (1962)	Law 16,640 (1967)
Criteria for expropriation of farms	<ol style="list-style-type: none"> 1. Abandoned or poorly used land 2. Land not worked directly by its owner 3. Small, subsistence farms (<i>minifundios</i>) 	<ol style="list-style-type: none"> 1. Abandoned or poorly used land <u>1/</u> 2. Land not worked directly by its owner 3. Small, subsistence farms (<i>minifundios</i>) 4. Farms in excess of 80 basic irrigated hectares <u>2/</u>
Functions of CORA	<ol style="list-style-type: none"> 1. Promote and execute the division of farmland in accordance with the economic needs of the country and each region 2. Regroup <i>minifundios</i> 3. Establish agricultural communities 4. Promote and execute the colonization of new lands 5. Provide credit and technical assistance 	<ol style="list-style-type: none"> 1. Improve the levels of living of the farm workers in accordance with the social and economic necessities of the country or of each region, in particular by means of the access to the ownership of the land they work 2. Regroup <i>minifundios</i> 3. Establish agricultural communities 4. Promote the incorporation of new lands into production for their subsequent transfer of ownership to farm workers or cooperatives 5. Provide credit and technical assistance

1/ Poorly used land is defined by Law 16,640 as farmland where crops or pasture cover less than 80 percent of any irrigable land or less than 70 percent of any nonirrigable--but arable--land.

2/ A conversion table is included in Law 16,640 for determining how much land in any location is equal to 80 basic irrigated hectares. The standard used is irrigated land in the central plain of Santiago Province. Conversion coefficients range from 2.667 (more fertile than the standard) to 0.008 (nonarable). In other words, some farms with 30 hectares may be subject to expropriation, whereas some farms with up to 10,000 hectares may not, depending on soil and water conditions.

Sources: (7, 8).

Law 16,640 also created a new agricultural institution, the Settlement (*Asentamiento*). The law defines the Settlement as representing a transitory stage in the social and economic organization of farmworkers during which time the workers can be trained to manage the farms and assume the responsibilities of agricultural entrepreneurs. The Settlement stage was to last 3 to 5 years, after which the land was to be constituted into family agricultural units ^{7/} and allotted to workers on an individual ownership basis.

Of the farms that were transferred from *CORA* to the farmworkers (less than 13 percent of the total land area expropriated), less than 10 percent were assigned to families by means of individual titles, the rest being assigned as community property to cooperatives which had been organized by *CORA*. By 1970, then, *CORA* was already moving away from the parcelling concept toward cooperative ownership. The remaining 87 percent of expropriated land was in the Settlement stage or in the process of being organized into Settlements when the government changed in 1970.

Each Settlement is managed by a five-member committee elected by the settlers. *CORA* provides one or two technicians as advisers. However, the technicians may be the actual managers of the Settlements because they represent *CORA* and it is *CORA* which supplies the production inputs through the use of subsidiary agencies specializing in inputs such as credit, machinery, seeds, fertilizers, and extension services.

1970 to the Present

Under the government of President Salvador Allende, who assumed office in November 1970, the expropriation process has been accelerated in terms of number of farms and area involved. Between November 1970 and March 1972, the Allende government expropriated 1,918 farms with a combined area of 3,080,126 hectares. During the 6-year period of the previous administration, 1,408 farms were expropriated with an area of 3,564,500 hectares. The Allende government plans to complete the expropriation of all large farms in 1972 (table 4).

The concept of agrarian reform, but not the law, was changed by the Allende government, as it had been under Frei. Under the new concept, there is no private ownership by individual owners except for the workers' house and garden and no new Settlements are formed. Three social features of the Settlements which were attacked by the Allende administration as a perpetuation of the old tenure system are:

1. Discrimination and class stratification among workers. Law 16,640 distinguishes between workers in terms of who will be eligible to receive land after the Settlement stage. Three classes of workers evolved: settlers with a right to land; settlers without a right to land; and the outside hired labor force. The law gives priority in assignment of land to heads of families who had been working and living on the land prior to the expropriation. This, in effect, precludes the possibility of any day laborer or migrant worker receiving land.

2. Division of income. *CORA* advances each worker (head of family) and male family member over 18 a lump sum each month for living expenses. At the end of the year, the net income of the Settlement is divided among the settlers and *CORA*, with *CORA* receiving 10 to 20 percent for operating expenses, and the workers the remainder minus the cash advances. The division among the settlers is made without regard to worker productivity except that a worker with a special skill might receive a bonus.

^{7/} Law 16,640 defines a family agricultural unit as the area of land personally worked by the owner that permits him and his family to live and prosper. The land characteristics taken into account include soil quality, location, topography, climate, exploitation possibilities, and soil use capacity.

Table 4.--Farms, farmland, and rural families affected by Chilean agrarian reform, 1965 to March 1972

Reform action	Amount of reform action under--		
			Total
	Frei administration 1965 to Nov. 3, 1970 1/	Allende administration Nov. 4, 1970 to Mar. 14, 1972	
Number of farms expropriated.	1,408	1,918	3,326
Number of Settlements established.	910	<u>2/</u>	910
Area of expropriated farmland (1,000 hectares).	3,564	3,080	6,644
Percent of total farmland . . .	12	10	22
Area of Settlements (1,000 hectares)	3,052	<u>2/</u>	3,052
Area of farmland redistributed to settlers on private ownership basis (1,000 hectares)	450	<u>2/</u>	450
Number of settler families receiving deeds to farmland.:	5,668	<u>2/</u>	5,668

1/ Law 16,640 was not effective until 1967 but *CORA* was already organizing Settlements on expropriated farms in 1965. The fact that certain changes precede their legal basis is a function of the lengthy legislative process and the degree of political control that the administration has over the legislature.

2/ Data not available on Settlements established under Allende nor on Agrarian Reform Centers organized after the establishment of Settlements was discontinued (in August 1971).

Source: (9).

3. Patriarchy. Only male heads of families are eligible to receive land after the Settlement stage and only men are elected to the Settlement committees.

Because of its weak political base, 8/ the Allende government decided not to introduce a new agrarian reform law as had been done during the previous two administrations. Instead, minor provisions in Law 16,640 were used to maintain the legality of the desired changes. For example, title IV of Law 16,640 states that when *CORA* has taken possession of an expropriated farm, it will proceed to install a Settlement. It also states, as mentioned previously, that the land acquired by *CORA* will be constituted into family agriculture units and allotted to workers in individual ownership. But the Allende government seized on an exception provision which states that "when *CORA* considers that such type of assignment is not possible for technical reasons due to the nature of the operations, as may happen with land exclusively adequate for forestation, grazing, fruit orchards, vineyards, or other land which, due to its natural

8/ Allende won the presidential election in 1970 with only 36 percent of the vote and the opposition parties control the legislature.

condition, is not susceptible to division without a deterioration of the soils or of its economic management possibilities, such land may be assigned in exclusive ownership to worker cooperatives or to *agrarian reform cooperatives*."9/ On the basis of this provision, the establishment of Settlements was discontinued in August 1971. After this date, the government began organizing Agrarian Reform Centers as a new type of transitional organization, the first of which was established in September 1971. After the transition stage, the Centers are to revert to agrarian reform cooperatives, referred to above. Settlements which had been created up to August 1971 have continued in operation, however.

In contrast to Settlements, which were usually established along the same boundaries as expropriated farms, Agrarian Reform Centers are formed by combining the expropriated farms into what the government hopes will prove to be a more rational production unit in terms of the utilization of the land and other inputs. The social aspects of the Settlements which were criticized by the Allende government, as mentioned earlier, still exist in the Settlements but were changed in the Agrarian Reform Centers.

In the Centers, the intent is that all workers over age 16 who had been working on the land at the time of expropriation have equal rights to participation in a Worker Assembly, regardless of whether they are male or female or live on the land. The members of the Assembly have the right to run for the presidency of the Center and to elect the president; to be a member of and to elect the members of the Production Committee (deals with work problems), Vigilance Committee (surpervises the social activity within the Center), and Welfare Committee (concerned with problems of social and cultural activity); and to be a representative to and to elect representatives to Worker Community Councils.

A Worker Assembly and the three committees described above operate in each Center with technical assistance from *CORA* similar to that provided to the Settlements. Worker Community Councils are organized at the community and province levels to give the workers representation in regional and national planning processes. Workers in the Centers are paid according to work quotas. Under the Center concept, no land is to revert to individual ownership except for the worker's house and garden. Instead, after the 3-to 5-year transition stage, the land is to become community property of the Center, to be worked on a cooperative basis.

Agricultural Credit System

In 1971, the government introduced a credit system to facilitate accomplishment of its policy of increasing public financial support to agriculture. Two new channels of credit were created--agricultural all-purpose loans and special advance payments.

Agricultural All-Purpose Loans

In June 1971, the State Bank (*Banco del Estado*) began making multipurpose loans to farmers, a step which eliminated the need for farmers to obtain loans for each type of expenditure, as in the past. By the end of November 1971, 652 million escudos (\$53 million at the official exchange rate) of this type of credit had been extended to 1,840 customers in the reformed sector (Settlements, Worker Community Councils, and Agrarian Reform Centers) and to 630 customers in the private sector. About 90 percent of the money went to the reformed sector.

Special Advance Payments System

This line of agricultural credit is related to the establishment of a vertical system of State agencies responsible for purchasing and marketing certain commodities.

9/ Source: (8). Italics added.

To obtain credit under this system, the customer must sign a delivery commitment with the State Bank, indicating the agency to which the product will be delivered. The customer may then receive an advance payment of up to 40 percent of the estimated value of the production offered for delivery. The advance may be in cash or partly in kind--that is, in inputs such as seeds, fertilizers, and pesticides. This line of credit was initiated in August 1971; by the end of November, the State Bank had lent 94 million escudos (\$7.7 million), 56 percent in cash and 44 percent in kind.

Both of these lines of credit are available at lower rates of interest than were charged under former lines of credit. The credit is discriminatory in that the interest rate is 18 percent to the private sector and only 12 percent to the public sector.

As of November 1971, the flow of credit to the public agricultural sector had more than doubled from a year earlier (table 5). It may not be assumed, however, that this had any effect on investment in capital formation. The additional credit may very well have been sufficient to finance only the previous levels of operation, especially in view of the rise in wages and costs of inputs that has occurred in Chile since 1970.

Table 5.--State Bank credit provided in Chile, 1970 and 1971

Sectors	1970 <u>1/</u>	1971 <u>1/</u>	Percent change (nominal) <u>2/</u>
	Million escudos <u>3/</u>		
Total State Bank credit . . .	3,635	6,928	+91
To total public sector. . .	773	1,689	+119
To public agric. sector . .	321	777	+142
To total private sector . . .	2,862	5,239	+183
To private agric. sector. .	NA	1,902	NA

NA = not available.

1/ As of October 31.

2/ The increase in the official cost of living index during November 1970 through October 1971 was 16.6 percent.

3/ The official exchange rate at the end of October 1971 was 12.23 escudos per dollar.

Source: (10).

Other Government Agricultural Policies

Marketing and Distribution

Another new policy of the Allende government is that State purchasing agencies will guarantee the farmer the purchase of all of his produce at the maximum price set by the Ministry of Economy. Farmers are not obligated to sell to the State agency but they may sell to others only at the price set by the government. The State agencies generally pay the farmer sooner for his produce and the margin is controlled in an effort to raise the wholesale price relative to the retail price. Retail food prices increased at an average annual rate of 25.4 percent from 1966 through 1971 and whole-sale food prices increased 28.0 percent.

The following is a list of State purchasing agencies and the commodities they purchase and market:

Empresa de Comercio Agrícola (ECA)--wheat, corn, beans, lentils, garbanzos, potatoes, onions, and frozen poultry, lamb, and pork

Industria Azucarera Nacional S.A. (IANSA)--sugarbeets

Compradora de Maravilla S.A. (COMARSA)--oilseeds

Corporación de Fomento de la Producción (CORFO)--livestock for breeding

Sociedad de Construcciones y Operaciones Agropecuarias S.A. (SOCOAGRO)--livestock for slaughter

Sociedad de Comercialización de la Reforma Agraria (SOCORA)--fruits and vegetables for export

Vinos de Chile S.A. (VINEX)--wine for export

Sociedad Auxiliadora de Cooperativas (SACOOP)--vegetables from cooperatives

Agricultural Inputs

The State Bank has been designated by the Allende government as the sole agency authorized to import fertilizers, pesticides, and seeds. Subsidies are paid to domestic producers of these and other inputs to keep prices to the farmer down. CORFO imports and distributes agricultural machinery.

AGRICULTURAL PRODUCTIVITY, OUTPUT, AND TRADE

Full implementation of changes in the land tenure system as proposed by the Frei and Allende administrations has been frustrated by political considerations. Opposition parties in the legislature are opposed to the substitution of cooperatives for private farm ownership on ideological grounds and to the deficit spending required to finance it. ^{10/} In addition, the landowners, organized in the National Agricultural Association, oppose change that would result in their losing their land. Farm seizures by workers have further exacerbated the problems of turmoil in the countryside. ^{11/}

One would expect, then, that the radical change introduced in the farm sector and the prospect of fuller implementation of change, accompanied by the political opposition to that change and the uncertainty generated by a climate of hostility between the workers and the owners of the means of production, would precipitate at least a short-term decrease in total output and in productivity. Tables 6 and 7 do show some drop in 1972; but because of normal weather variability and for other reasons explained later the causes of the declines cannot be clearly identified with the changes previously described.

^{10/} The principal opposition parties as of March 1972 were the Christian Democratic Party (PDC), the Radical Democratic Party (PDR), and the National Party (PN).

^{11/} From November 10, 1970, through September 27, 1971, 694 farms were seized by farmworkers dissatisfied with the pace of reform and by Indians who felt they had legal titles to the land. Of this total, however, 555 had been returned to their owners by the end of September 1971. (11).

Total Agricultural Output

Agricultural production increased 2.4 percent annually from 1966 through 1971, compared with 1.8 percent during 1936-65 12/. The increased growth rate can be attributed to larger output of wheat, sugarbeets, poultry meat, and milk. Under either the Frei or the Allende government, all of these commodities have been targets of specific policies aimed at increasing their production. Wheat and sugar have been imported in large quantities in the past and it was felt that the country could easily be self-sufficient in production of those commodities. But sugarbeet production and the area devoted to sugarbeets decreased sharply in 1971 and even further in 1972 as Chile began importing sugar from Cuba. Increased poultry meat production, strongly encouraged by the Frei administration, has been an import-substitution measure aimed at decreasing red meat imports. Storm damage in 1971 and an outbreak of Newcastle disease in 1972 have prevented further increased production since 1970, however. Increased milk production is a social goal of the current administration--President Allende has promised to provide one-half liter of milk per day for each child under 15 years of age.

Institutional changes introduced by the Allende administration may not have had much direct impact on 1971 crops because crop decisions had been made and planting had taken place prior to the change in administrations. For the livestock sector, 1971 data show increases for milk and eggs offsetting decreases in other commodities (table 6). But analysis of changes in output of the sector is obscured by a lack of definitive information on such factors as the extent and effect of the reported clandestine slaughter and smuggling of cattle into Argentina following Allende's election 13/.

Crop Productivity

Indexes of crop productivity for 1966 through 1972 are as follows:

	<u>Index</u>
	(1961-65 = 100)
1966	104
1967	123
1968	118
1969	102
1970	120
1971	119
Est. 1972	107

Crop productivity increased 23 percent in 1967 over the average for 1961-65, the base period for this study. In 1969, crop productivity dropped sharply as a result of a severe drought. In 1970, it returned close to the pre-drought level and remained near that level in 1971. The estimated area planted to crops and the forecast of output indicate that crop productivity may be down sharply in 1972.

Yields of rice, corn, beans, garbanzos, onions, tobacco, and sunflowerseed had not recovered to their pre-drought levels by 1971. Yields of rice, garbanzos, onions, and tobacco in 1971 were less than during 1961-65. Of all crops, rapeseed showed the largest increase in yields by 1971, followed by corn (tables 7 and 8).

12/ The annual population growth rate during 1936-65 averaged about 2.2 percent. Since 1965, it has been at an estimated 1.9 percent.

13/ In speeches to the nation, President Allende gave an estimate of 200,000 head of cattle smuggled into Argentina.

Table 6.--Production of principal agricultural commodities in Chile,
average 1961-65, annual 1966-71, forecast 1972

Commodity <u>1/</u>	Average 1961-65	1966	1967	1968	1969	1970	1971	1972 <u>2/</u>
		1,000 metric tons						
1. Wheat (12).	1,082	1,077	1,203	1,220	1,214	1,307	1,287	1,150
2. Rice (16).	85	73	86	94	37	76	67	65
3. Corn (13).	206	285	362	321	154	239	258	264
4. Barley (11).	74	88	118	157	80	97	114	100
5. Oats (10).	89	79	115	163	95	111	112	100
6. Rye (8).	7	9	9	8	10	11	12	10
7. Beans (32).	67	69	90	66	47	66	72	60
8. Lentils (29).	13	5	4	4	8	11	12	10
9. Peas (20).	6	9	9	12	6	7	9	11
10. Garbanzos (24).	4	4	8	8	4	5	7	6
11. Potatoes (8).	793	748	717	725	603	684	764	729
12. Onions (3).	122	156	104	95	80	75	72	72
13. Sugarbeets (2).	548	721	1,071	1,143	1,066	1,655	1,391	1,000
14. Tobacco (35).	7	5	6	6	5	8	5	7
15. Rapeseed (22).	48	65	61	48	64	70	82	76
16. Sunflowerseed (20).	39	58	33	43	28	28	20	19
17. Wine <u>3/</u> (18).	477	474	489	536	404	401	525	400
18. Beef and veal <u>4/</u> (98):	98	101	92	95	102	105	98	65
19. Lamb and mutton (102):	36	39	40	30	39	35	31	32
20. Pork (110).	42	53	56	63	72	48	44	47
21. Poultry meat (149).	21	36	42	47	54	56	55	55
22. Milk <u>3/</u> (10).	790	830	847	911	982	1,071	1,160	1,241
23. Eggs <u>5/</u> (129).	35	57	49	54	49	41	50	53
24. Wool (116).	24	26	27	24	25	23	20	21
		Percent of 1961-65 average						
Index:								
All commodities	100	112	117	120	114	118	121	112
Crops (lines 1-16)	100	105	117	117	97	116	117	106
Livestock products (lines 18-24)	100	121	120	125	135	127	127	123

1/ Numbers in parentheses refer to the value weight used to prepare the index of aggregate production. The value weight represents the relative producer price structure during the base period (1961-65).

2/ Forecast (estimate for crops).

3/ In million liters.

4/ Registered domestic slaughter only.

5/ Converted at 1 million eggs = 45 metric tons.

Source: (12).

Table 7.--Area of crops and index of crop productivity in Chile,
average 1961-65, annual 1966-72

Crop	Average 1961-65	1966	1967	1968	1969	1970	1971	1972 ^{1/}
1,000 hectares								
1. Wheat.	753	780	718	700	743	740	727	727
2. Rice	31	37	27	32	16	25	27	26
3. Corn	86	76	92	89	58	74	77	83
4. Barley	41	39	50	72	45	47	52	56
5. Oats	77	66	60	109	82	73	75	70
6. Rye.	7	7	7	7	8	8	9	8
7. Beans.	69	65	68	53	47	57	70	72
8. Lentils.	25	11	7	7	14	17	18	18
9. Peas	9	11	9	17	11	11	10	10
10. Garbanzos.	8	9	9	16	9	11	16	14
11. Potatoes	90	77	77	80	76	72	80	81
12. Onions	5	6	4	5	5	4	5	5
13. Sugarbeets	15	21	29	31	36	42	35	31
14. Tobacco.	3	3	3	3	3	4	3	3
15. Rapeseed	42	62	45	37	49	54	49	54
16. Sunflowerseed.	33	42	22	29	25	20	15	20
17. Total.	1,294	1,312	1,227	1,287	1,227	1,259	1,268	1,278
Percent of 1961-65 average								
18. Index of crop area.	100	101	95	99	95	97	98	99
19. Index of crop production ^{2/}	100	105	117	117	97	116	117	106
20. Index of crop productivity (line 19 divided: by line 18)	100	104	123	118	102	120	119	107

^{1/} Area planted. Area for other years is area harvested.

^{2/} From table 6.

Source: (13).

Livestock Productivity

The number of cattle in Chile has remained at nearly the same level since 1930 ^{14/}. The level projected for 1970 by the Catholic University of Chile (2), based on an assumption of no institutional changes, was 3,076,400, but the actual number was an estimated 2,900,000 at the end of 1971, the number was only an estimated 2,600,000. The sharp drop has been attributed to clandestine slaughter and to the smuggling of about 200,000 head into Argentina shortly after the election victory of President Allende.

^{14/} In an address to the nation on February 28, 1972, President Allende stated that "in 1930 there were 2.5 million head of cattle in Chile. Now 42 years have passed and our human population has doubled, yet the number of cattle has increased only 2.6 million" (15).

The cattle offtake ^{15/} percentage was relatively stable from 1965 to 1971, the 7-year average being 17.5 percent. This compares to about 25 percent in Argentina and 40 percent in the United States. The offtake percentage is a measure of efficiency if weighted against average carcass weight of domestic cattle slaughtered. During 1965-71, the average carcass weight decreased steadily. This cannot be explained only by the younger age of cattle slaughtered because if this were the sole cause, the offtake percentage would have increased during the period. Other inputs necessary for the fattening of the cattle must have decreased, probably as a direct result of the uncertainty caused by the institutional changes taking place in the farm sector (table 9).

Table 8.--Indexes of crop yields in Chile, 1966-72

Crop	: 1966	: 1967	: 1968	: 1969	: 1970	: 1971	: 1972 ^{1/}
	Percent of 1961-65 average						
1. Wheat	96	117	121	113	123	123	110
2. Rice	72	116	107	84	111	91	91
3. Corn	156	164	150	111	135	140	133
4. Barley	126	131	121	98	114	122	99
5. Oats	103	166	129	100	131	128	123
6. Rye	129	129	114	125	138	133	125
7. Beans	109	136	129	103	120	106	86
8. Lentils	87	110	110	110	125	129	108
9. Peas	122	149	106	82	96	134	164
10. Garbanzos	88	178	100	88	90	88	86
11. Potatoes	94	101	101	81	107	109	103
12. Onions	107	107	78	66	77	59	59
13. Sugarbeets	94	101	101	81	107	109	88
14. Tobacco	72	86	86	72	86	72	100
15. Rapeseed	92	119	114	115	114	146	124
16. Sunflowerseed	117	127	125	95	119	113	81

^{1/} Estimated.

Sources: Tables 6 and 7.

Foreign Trade

Prior to 1940, the value of Chile's agricultural exports exceeded that of agricultural imports. By 1966, imports exceeded exports by \$108 million (table 10) ^{16/}. By 1971, not only had the agricultural trade deficit reached \$275 million, but the overall merchandise trade balance showed a deficit of \$9 million--the first deficit since 1964. The deficit on the overall merchandise trade balance is attributed to decreased earnings from copper exports and greatly increased imports of food due to the government policy of increasing wages while freezing prices--or at least containing prices below an equilibrium level between the demand for and the supply of food.

^{15/} Offtake refers to natural increase in cattle numbers arrived at by subtracting beginning stock and imports from slaughter, exports, and ending stock.

^{16/} Agricultural trade as defined herein includes food and agricultural raw materials. It does not include forest products or agricultural requisites (fertilizers, insecticides, agricultural machinery). The major Chilean agricultural exports are fruits, vegetables, and fishmeal.

Table 9.--Cattle offtake (natural increase) in Chile, 1965-71

Item	1965	1966	1967	1968	1969	1970	1971
				<u>1,000 head</u>			
1. Slaughter <u>1/</u>	461	523	501	666	676	650	604
2. Imports	79	70	111	98	84	40	44
3. Exports	0	0	0	0	0	0	<u>2/</u> 200
4. Number at beginning of year	2,800	2,900	3,000	3,100	3,000	2,900	2,800
5. Number at end of year	2,900	3,000	3,100	3,000	2,900	2,800	2,600
6. Offtake (lines 1-2+3-4+5)	482	553	490	468	492	510	560
				<u>Percent</u>			
7. Offtake percentage : (line 6 divided by: line 4).	17.2	19.1	16.3	15.1	17.0	17.6	20.0
				<u>Kilograms</u>			
8. Av. carcass weight : of domestic cattle : slaughtered.	226	193	184	167	172	172	160

1/ Includes cattle imported for slaughter.

2/ Estimate of number of cattle smuggled into Argentina.

Source: (14).

Table 10.--Value of Chile's total foreign trade and trade with the United States, 1966-71

	:	:	:	:	:	:	:					
Item	:	1966	:	1967	:	1968	:	1969	:	1970	:	1971
	:		:		:		:		:		:	
	:	<u>Million dollars</u>										
	:											
Exports:	:											
Total	:	876		908		936		1,145		1,262		1,165
Agricultural. . .	:	56		44		52		52		58		60
Total to U.S. .	:	243		175		203		151		154		91
Agricultural	:											
to U.S.. . . .	:	18		10		18		14		10		6
	:											
Imports:	:											
Total	:	751		723		744		939		1,118		1,174
Agricultural. . .	:	164		174		176		206		235		335
Total from U.S.:	:	250		248		307		314		300		224
Agricultural	:											
from U.S. . . .	:	41		25		35		26		32		22
	:											
Trade balance:	:											
Total	:	125		185		192		206		144		-9
Agricultural. . .	:	-108		-130		-124		-154		-177		-275
Total with U.S.:	:	-7		-73		-104		-163		-176		-133
Agricultural	:											
with U.S. . . .	:	-23		-15		-17		-12		-22		-16
	:											

Source: (16).

While the Chilean market for foreign agricultural commodities has grown, both the U.S. share of the market and the value of U.S. agricultural exports to Chile have decreased. Unassisted commercial sales of U.S. agricultural commodities in 1971, however, were unchanged from the average for 1966-70. There were no concessional sales of U.S. agricultural commodities in 1971 and U.S. donations of food were slightly above the 1966-70 average. (See table 11 and the figure below.)

The shift away from the United States as a supplier of agricultural commodities can be seen by looking at major Chilean agricultural imports (table 12). The USSR has begun exporting wheat to Chile. Australia has increased her sales of wheat and begun exporting rice to Chile as well. Argentina has supplied a greater share of the corn market, and China has begun exporting edible oils and rice to Chile. In general, the shift is due to the availability of credit from these countries.

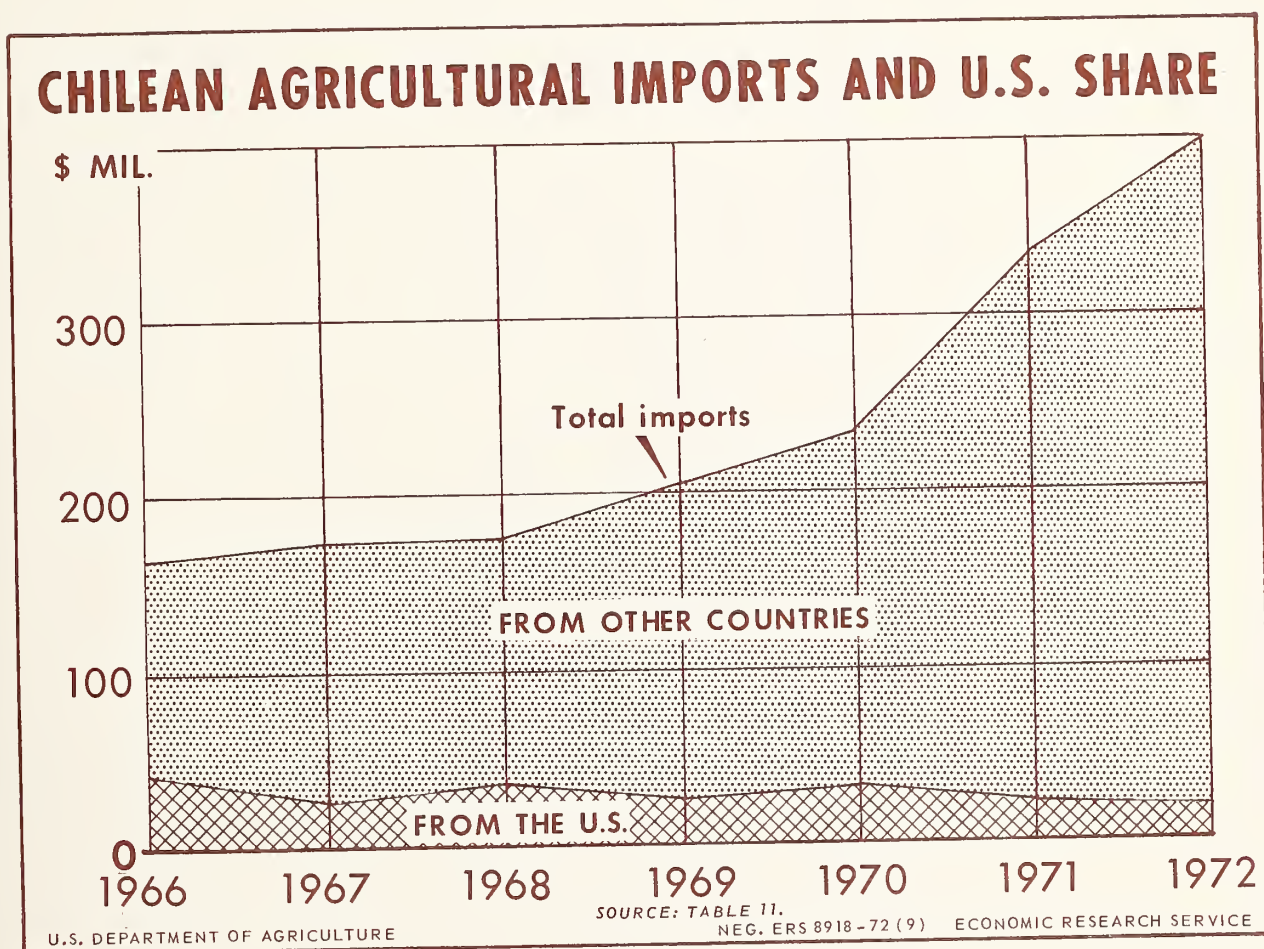


Table 11.--U.S. agricultural exports to Chile under Government programs and total, 1966-71

Programs	1966	1967	1968	1969	1970	Average 1966-70	1971
	<u>1,000 dollars</u>						
Concessional sales (Title I, P.L. 480) . . .	12,330	0	12,645	12,107	1,020	7,620	0
Government donations (Title II, P.L. 480) . . .	580	598	2,760	591	3,492	1,604	1,407
Voluntary agency donations: (Title II, P.L. 480) . . .	2,872	4,809	5,984	3,689	3,562	4,183	6,306
Barter (Title III, P.L. 480) . . .	13,495	21	0	0	0	2,703	0
A.I.D. programs	2,631	1,011	736	0	0	876	0
Total agricultural exports: to Chile under Government: programs	31,908	6,439	22,125	16,387	8,074	16,986	7,713
Other agricultural exports: to Chile	9,046	18,424	13,036	9,569	23,924	14,800	14,785
Total agricultural exports: to Chile	40,954	24,863	35,161	25,956	31,998	31,786	22,498

Source: (17).

Table 12.--Chilean agricultural imports by country of origin, 1966-71 and forecast 1972

Commodity and country of origin	1966	1967	1968	1969	1970	1971	1972 ^{1/}
Beef and veal ^{2/}	39.0	52.0	46.0	38.0	27.0	59.0	80.0
Wheat (incl. flour in wheat: equivalent)	539.5	240.4	371.5	278.2	295.0	422.0	600.0
U.S.	390.0	90.5	100.4	52.7	140.0	24.0	50.0
Australia	11.1	68.4	98.0	92.3	19.8	201.0	200.0
Argentina	20.4	36.8	96.7	104.2	82.6	87.0	200.0
USSR	--	--	--	--	--	110.0	100.0
Corn (incl. feed corn)	28.5	37.2	72.8	254.6	240.0	256.3	350.0
U.S.	28.5	25.4	1.1	131.4	30.0	26.3	76.0
Argentina	--	11.8	--	123.2	210.0	230.0	200.0
Dry milk	22.0	11.3	7.8	6.8	7.5	39.0	55.0
U.S.	5.0	5.0	1.1	3.4	2.3	8.0	
Fixed vegetable oils	8.4	17.4	36.4	27.4	37.0	38.0	40.0
U.S.	1.3	0.3	11.7	11.8	19.9	17.6	
Spain	--	--	0.1	0.1	1.0	5.4	
Poland	--	--	--	4.3	--	3.5	
China	--	--	--	--	--	10.0	
Rice, rough	39.9	10.2	14.0	50.1	76.2	67.1	65.0
U.S.	10.6	7.4	8.5	9.9	6.0	--	
Argentina	9.6	0.3	1.5	21.2	12.9	--	
Uruguay	18.9	2.0	3.1	5.3	6.4	--	
Australia	--	--	--	--	--	30.0	
China	--	--	--	--	--	10.0	
Tobacco, unmanufactured	3.2	2.2	1.2	1.8	1.5	1.0	1.0
U.S.	1.0	2.0	1.0	1.0	1.0	1.0	
Cotton, other than linters	26.0	31.7	27.4	26.9	30.7	30.5	30.0
U.S.	0.3	1.0	--	--	--	--	
Peru	13.8	4.2	5.9	10.1	6.6	NA	
Mexico	11.9	22.3	18.9	14.1	17.3	NA	

-- = none or less than 50 metric tons. NA = not available.

^{1/} Forecast.

^{2/} Includes live cattle for slaughter, converted on a carcass-weight basis.
Argentina is the principal supplier.

Source: (16).

(over)

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